**Instructor*:* Mark Johnson**

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**Office Hours: M-Th (7:30am – 8am, 2pm – 3pm), F (7:30am – 8am)**

**Class Hours: M-F (AM Shift 8:10am – 10:40pm) (PM Shift 11:25am – 1:55pm)**

**Course Description:**

*Energy & Power -Year 1, 2 Semesters (540 hours) First year students*

*Energy & Power-Year 2, 2 Semesters (540 hours) Second year students*

The Energy & Power program allows students to learn about a variety of careers within the electrician specialty. We are a Washington State approved Pre-Apprenticeship program working to prepare students to enter professional apprenticeship training or pursue other post-secondary education opportunities. This program is dedicated to using rigorous industry standards. Technical and professional development will be encouraged throughout the course.

**Instructional Philosophy:**

***Vision***

We are dedicated to training Spokane area high school students for successful entry level employment in the Energy & Power program and other related industries.

***Mission***

Building technical & professional skills (21st. Century Skills) with which students may obtain a career in the Energy & Power industries nationwide.

***Beliefs***

The student workplace will be modeled after industry to help students make a seamless transition from education to employment.

Mistakes are a powerful learning tool and students should have the freedom of trial and error to build a strong understanding of cause & effect relationships.

The value & intent of the instruction must be clear in a student’s mind; not only to engage student interest, but to demonstrate the practical application in the workplace.

**Course Goals:**

* Students will use tools and equipment found in the electrical industry.
* Students will work effectively & respectfully with diverse teams to explore and perform the various duties of electrical industry personnel.
* Students will develop personal relationships in the electrician industry that will provide opportunities for career placement and advancement within that field.

**Major Course Components:**Students will complete assignments, activities, competencies, and lab work in the following areas:

* 21st Century Skills
  + Résumé and Job Search
* Occupational Health and Safety (OSHA 10)
* Tools and Equipment
* Mathematics for the trades (Algebra, Geometry, Trigonometry, Fractions, General)
* Basic Electrical Theory and Ohms Law
* National Electrical Code
* Washington Administrative Code (WAC)
* Basic Residential Electrical Installation
* Basic Commercial Electrical Installation
* Power Generation and Transmission
* Electrical Distribution

**Assessments:**

Students will complete various assessments using industry standards and expectations. Pre-tests, final exams, skill demonstrations, and professional development exercises that reflect national standards are required for program certification and apprenticeship opportunity.

**Grading Policies:**

Assignments are graded using points, with the grade determined by the number of points earned.

All programs at NEWTech use the following 21st Century Skill targets and will be assessed as 33% of the student’s final grade:

* I can present and conduct myself in a professional manner.
* I can work with others in a flexible and consistent way to accomplish a common goal.
* I can communicate effectively in all forms within diverse environments utilizing common industry language.
* I can actively research, synthesize and apply new information and skills in order to reach conclusions.
* I can find multiple ways to solve a problem and can share the strengths and weaknesses of my solutions with a variety of audiences.

**Grade Description**

|  |  |
| --- | --- |
| **Grade** | **Description (%)** |
| A – A- | 100 – 90 |
| B+, B, B- | 89 - 80 |
| C+, C, C- | 79 - 70 |
| D+, D | 69 - 60 |
| F | 59 and Below |

Examples supplied below are not meant to be exhaustive, but to work as guidelines for each type of target.

**Technical Content Targets:**

In-class assignments, tests, competencies, and activities are evidence of reaching proficiency

*Examples*: Safe and proper use of tools and personal protection equipment.

**Technical Content Target examples:**

* “I can demonstrate workplace safety within the Energy & Power shop with myself, my peers, and my teachers”
* “I can use my understanding of electrical theory to demonstrate my industry level skills in order to solve various problems”

**Industry Certifications:**

* OSHA 10
* First Aid/CPR
* NW Electrical Alliance Interim Credentials

**Materials:**

* Students are required to have health/medical insurance before any shop work will be allowed.
* Must have student/parent or guardian info and medical sheet on file in school office.
* Students will be provided with their first pair of safety glasses. Replacement glasses are available for through the instructor and can be paid for in the business office.
* Students will be required to purchase an Energy & Power work shirt as their class uniform.
  + Students are expected to wear their uniform shirt in class every day.
* Students are required to wear appropriate work pants (no holes), closed toe shoes, and other Personal Protective Equipment (PPE) the instructor assigns.
  + Form-fitting Hy-Flex Cut Resistant Gloves
* Other items students should be prepared with in class are:
  + Leather Work Belt
  + Folding Pocket Knife (4” blade)
  + Spiral Notebook
  + #2 Pencils
  + TI-30XA Calculator
  + Current Uglys Electrical Reference book by George v. Hart (Amazon, Home Depot, etc.)

**Energy & Power Policies at NEWTech**

**Appearance Standards**:

Dress standards as outlined in the NEWTECH Skill Center Student Handbook must be met at all times. Student dress cannot disrupt the educational process. Dress code violations include but are not limited to:

* Dress that communicates the promotion of tobacco, alcohol, drugs, violence, vulgarity, profanity, or that is disparaging to gender, ethnicity, religion, gangs, or that has a sexual connotation is not acceptable school attire.
* Underwear should be worn but should not be visible. Clothing that reveals undergarments, bare midriffs, bare backs, or cleavage is not acceptable school attire because of safety and appearance reasons.

**Program Uniform:**

We expect exacting standards of personal appearance*.* The following clothing articles need to be worn whenever working in the shop, including during clean-up:

1. Uniforms– Must be kept in safe, professional condition. They also need to be cleaned once a week, more often if necessary. Shorts and tank tops are NOT acceptable.
2. Shoes – A separate pair of shoes can be kept for use in the shop. Anything other than designated shop footwear will not be allowed in the shop.
3. Jewelry – Rings, wrist watches, bracelets, earrings that dangle, necklaces, ties, etc. present a safety hazard and therefore are NOT to be worn in the shop.
4. Long Hair – Shoulder length or longer hair must be secured while in the shop.

**Safety Glasses**

Clear, non-tinted, safety glasses must be always worn in the shop (excluding going to and from class or locker). Prescription eyeglasses are not considered safety glasses. Students wearing eyeglasses are required to wear safety glasses over their prescription glasses while in the shop.

**Hearing Protection**

Hearing protection devices are available and must be worn when performing certain noisy operations or in the vicinity of those operations.

**General Safety Practices**

1. Students will not operate any power tool or machine until he/she has been given instructions, has fully passed a prescribed safety test, and demonstrated to the instructor that he/she is able to operate the equipment in a safe manner.
   1. Assignment to the shop does not imply permission to use machines.
   2. Unsafe equipment, practices, or unsafe conditions will be reported immediately.
   3. Students will not remove guards from any shop equipment or machinery.
   4. All accidents will be reported immediately to the instructor.
   5. If, in the event of an emergency the instructor must leave the shop, all work must stop immediately, and all students are to sit quietly in their classroom seats.
   6. Students are not to be in the shop without the instructor present.
   7. Horseplay and inappropriate or obscene language or gestures will not be tolerated in the shop.

**Student Professionalism**

* Students are to be always in their assigned area. Students may leave the shop area only with instructor permission.
* Cell phones and electronic devices are to be securely stored and used only with instructor permission and for class purposes.
* Students are required to be present and on-time daily. Attendance can be reported to the office attendance line and students should email me directly as well if they are going to be absent.
* Students are expected to participate in class.
  + Participation is defined as: Being present, in uniform, and prepared with all required gear.
  + Points are given daily for participation, professional attire, and preparedness. Failure to comply with these requirements will result in loss of points for the day.
* As part of your professional responsibility, we treat all students, visitors, and NEWTech staff with respect as we are not only a reflection of ourselves, but NEWTech, the Energy & Power program, the only Pre-Apprenticeship program in the state, and our sending high school.
  + This includes guest speakers that come and visit our program.

**Clean Up**

Clean-up will begin within 10 minutes of departure. All students are responsible for their designated clean-up areas and must clean-up before dressing down. Failure to meet the clean-up standards will result in the loss of shop privileges and will affect students’ performance grade.

**Student Safety Contract for**

**NEWTech Energy & Power**

I, the instructor of the program, place student safety as my number one priority. I ask the students to read and sign the safety contract indicating they understand the safety procedures as well as the guidelines outlined in the syllabus. I also ask the parent or guardian to read and sign the safety contract indicating their permission to allow the student to participate in the class.

Student Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is enrolled in Energy & Power and will, as part of this lab experience, be using hand tools, operating machines, and handling materials related to the course curriculum. Each student will be given proper instruction in the use of the equipment and all related safety procedures. As with all training, the responsibility for following the proper safety procedures and the guidelines outlined in this syllabus must be assumed by the student.

1. I will abide by all school policies as stated in the student handbook.

1. I will follow all safety regulations for working in the school lab.

1. I will not operate a piece of equipment without first receiving proper training from the instructor.

1. I will always wear safety glasses while working in the lab. These safety glasses are supplied by the program and will have clear lenses with side shields and be ANSI Z87 rated.

1. I will wear clothing that does not create a safety concern in the lab and is the appropriate uniform for the Energy & Power program. Sandals, slippers, or any open toed shoes are not allowed in the lab.

1. I will immediately report any injury or accident to the instructor.

1. I will ensure my action in the lab does not endanger others or myself.

1. I understand a messy work area is unsafe and that I am responsible for cleaning up after I am done.

1. I understand that safety instruction missed due to absences is my responsibility to make up prior to working in the lab.

1. I understand that failure to follow safety regulations will be grounds for removal from the class.

# Students Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_

I have read and understand the safety contract and the associated syllabus. By signing the contract, I give my consent to allow my child to operate all the machines and equipment necessary and understand the expectations for them to successfully carry out the requirements of the course.

# Parent/Guardian Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_

**Parent/Student Awareness Form**

By signing this I am indicating that I have read the Syllabus and policies for Energy & Power at NEWTech and agree to the terms and expectations defined in it for the entire school year.

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Date Student

Student Email:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Phone #:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Student Mailing Address:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Date Parent/Guardian

Parent / Guardian Email:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent / Guardian Phone #:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Parent / Guardian Mailing Address:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_